FK8V0306

Silicon N-channel MOS FET

For DC-DC converter circuits

■ Overview

N-channel single type, MOS FET in a compact surface mount type package.

■ Features

- Low drain-source ON resistance: $R_{DS(on)}$ typ. = 15 mΩ (V_{GS} = 10 V)
- High-speed switching: Q_g = 3.8 nC
- Small size surface mounting package: WMini8-F1
- Contributes to mount area reduction
- Eco-friendly Halogen-free package

■ Packaging

FK8V03060L Embossed type (Thermo-compression sealing): 3000 pcs / reel (standard)

■ Absolute Maximum Ratings T_a = 25°C

Parameter		Symbol	Rating	Unit
Drain-source surrender voltage		V_{DSS}	33	V
Gate-source surrender voltage		V_{GSS}	±20	V
Drain current *1		I_D	6.5	A
	t = 10 s		8	
Peak drain current *1, 2		I_{DP}	26	A
Souce current (Body diode)		$I_{S\ (BD)}$	6.5	A
Power dissipation *1		P_D	1	W
	t = 10 s		1.5	
Channel temperature		T_{ch}	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

Note) *1: Mounted on a glass epoxy PC board: 25.4 mm × 25.4 mm × 0.8 mm
*2: Pulse measurement: Channel temperature not to exceed 150°C

■ Package

- Code

WMini8-F1

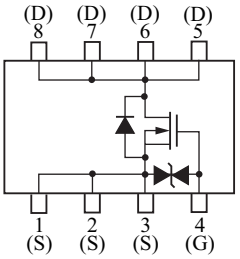
Package dimension clicks here.→ Click!

- Pin Name

1: Source	5: Drain
2: Source	6: Drain
3: Source	7: Drain
4: Gate	8: Drain

■ Marking Symbol: 3F

■ Internal Connection



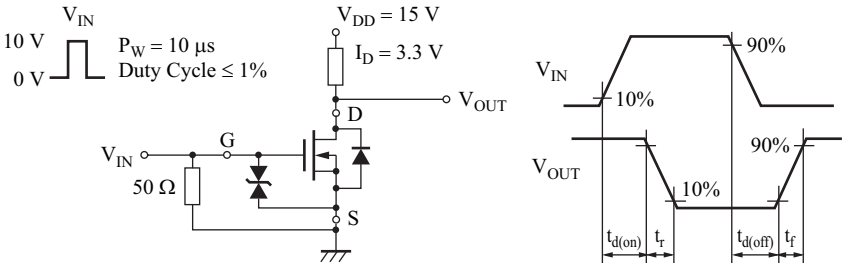
■ Electrical Characteristics T_a = 25°C±3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 1 mA, V_{GS} = 0 V	33			V
Drain-source cutoff current	I_{DSS}	V_{DS} = 33 V, V_{GS} = 0 V			10	μA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±16 V, V_{DS} = 0 V			±10	μA
Gate threshold voltage	V_{TH}	I_D = 0.48 mA, V_{DS} = 10 V	1		2.5	V
Drain-source ON resistance *1	$R_{DS(on)}$	I_D = 3.3 A, V_{GS} = 10 V		15	20	mΩ
		I_D = 3.3 A, V_{GS} = 4.5 V		22	35	
Short-circuit input capacitance (Common source)	C_{iss}	V_{DS} = 10 V, V_{GS} = 0 V, f = 1 MHz		360		pF
Short-circuit output capacitance (Common source)	C_{oss}			70		pF
Reverse transfer capacitance (Common source)	C_{rss}			50		pF
Turn-on delay time *2	$t_{d(on)}$	V_{DD} = 15 V, V_{GS} = 0 V to 10 V, I_D = 3.3 A		8		ns
Rise time *2	t_r			3		ns
Turn-off delay time *2	$t_{d(off)}$	V_{DD} = 15 V, V_{GS} = 10 V to 0 V, I_D = 3.3 A		24		ns
Fall time *2	t_f			9		ns
Gate charge load	Q_g	V_{DD} = 15 V, V_{GS} = 0 V to 4.5 V, I_D = 6.5 A		3.8		nC
Gate-source charge	Q_{gs}			1.4		nC
Gate-drain charge	Q_{gd}			1.6		nC
Body diode characteristics						
Drain-source voltage *1	V_{SD}	I_S = 3.3 A, V_{GS} = 0 V		0.8	1.2	V

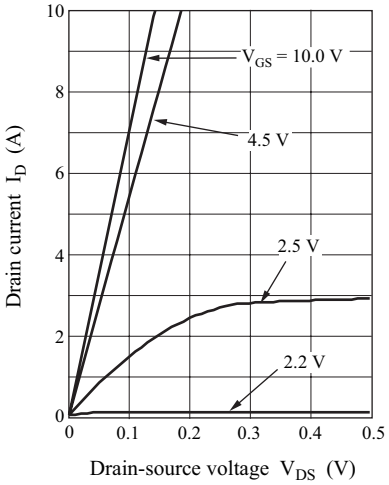
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. ∗1: Pulse measurement: Channel temperature not to exceed 150°C

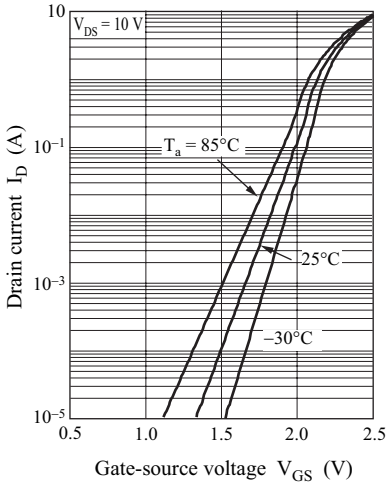
∗2: Measurement circuit



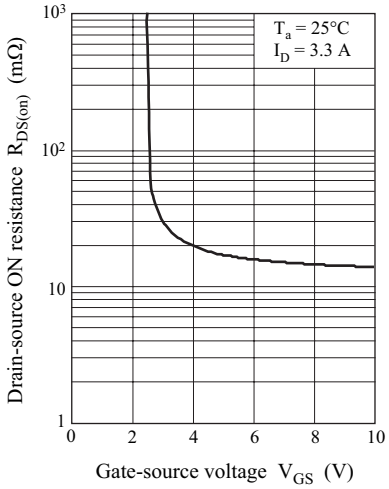
I_D — V_{DS}



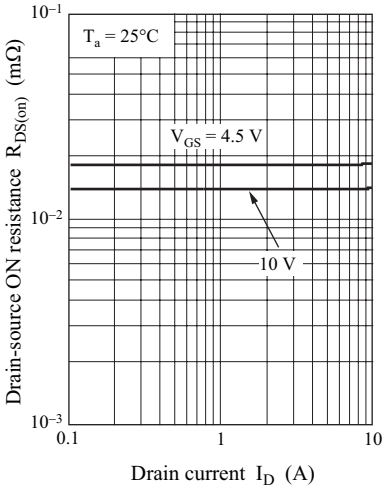
I_D — V_{GS}



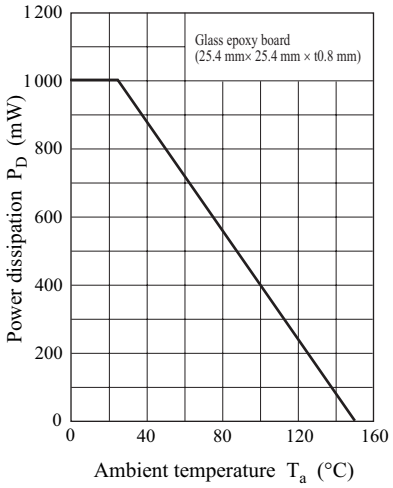
$R_{DS(on)}$ — V_{GS}



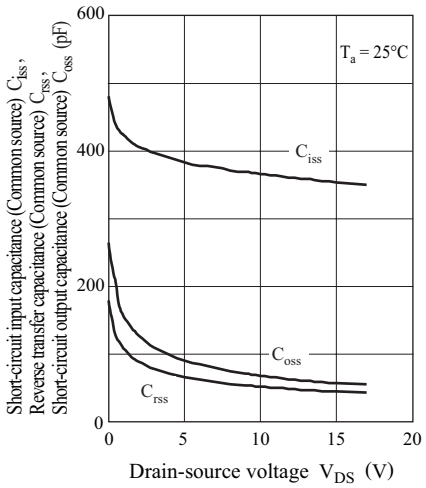
$R_{DS(on)}$ — I_D



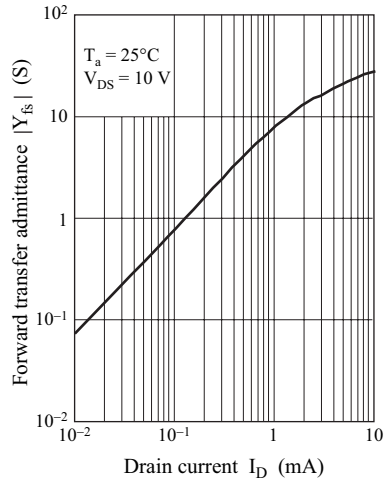
P_D — T_a



C_{iss} , C_{rss} , C_{oss} — V_{DS}



$|Y_{fs}|$ — I_D



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